

Sleep and Society: Continuity and Chaos across the Life Course

A Research Priority Agenda for Sleep in Society



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Foreword

Sleep is a social issue. Across the life course sleep is foundational for behavioural regulation, social wellbeing, and learning. Culture, social circumstance, work patterns, education, childcare and aged care patterns all significantly contribute to, and respond to the duration, pattern and regularity of sleep. Adequate sleep quantity and quality is a human right and sleep security is vital for social wellbeing, learning and productivity.

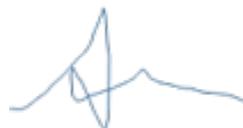
Sleep is a meta-index of social functioning. This report establishes, for the first time, a research policy agenda focussed on current and emerging issues regarding the interplay of social change and sleep adequacy.

The report emerges from a two day workshop, *Sleep and Society: Continuity and Chaos across the Life Course*, conducted on the 15th and 16th of August 2019 at the Institute for Social Science Research, The University of Queensland. This workshop brought together a diverse and active group of researchers to address sleep security as a social science priority.

We would like to thank the large number of researchers who contributed to the development of this report and provided their experience and expertise in generating the contained research agenda for sleep as a social priority. We would also like to acknowledge the important work of researchers both in Australia and internationally that is helping to establish and understand the role of sleep in society. This document will be a valuable and important tool to guide future research and policies regarding sleep and society into the future.



Dr Sally Staton
and



Professor Simon Smith

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Background

Sleep as a social science priority

Humans spend approximately 25 years of their lives asleep across the lifespan. Sleep is a foundation for a happy, stable, healthy and inclusive social life, and one factor that integrates a broad range of family, community, and cultural influences. The links between sleep and social experience encompass a wide range of overlapping sociodemographic and psychosocial dynamics, including social relationships, race, ethnicity and culture, gender, employment, education, workplace environment, socioeconomic status, and neighbourhood context. Many of these relationships are reciprocal or interactive.

Sleep acts as both a barometer for, and influencer of, continuity and chaos in our social lives. Shifting or variable sleep times due to disrupted family environments, work demands or environmental exposures (e.g. light and noise), can induce 'social jetlag', insufficient and poor quality sleep, and other forms of social discontinuity, disruption, and disengagement. Disruption to sleep in turn has very significant and direct impacts on social functioning, health, and productivity.

Sleep strongly predicts a very broad range of life-long developmental outcomes (especially new learning and mental health), work-related outcomes (including stress, absenteeism,

poor health, safety & performance), and social outcomes (including loneliness and isolation, social support and engagement, family and interpersonal relationships). Access and opportunity for adequate sleep is therefore vital. Sleep security exists when individuals have unimpeded access to sufficient and high quality sleep to maintain a satisfying, healthy, and active life. Sleep is a basic need and right, and sleep security a significant index of societal functioning.



Adequate sleep quantity and quality is a human right and sleep security is vital for social wellbeing, health, learning and productivity.



Purpose

There is currently no clear 'go to' authority for authority on the intersection between sleep security and social science. Setting a research agenda for sleep and society is a critical 'next step' towards addressing the significant social and economic burden of sleep insecurity across the life course.

This report emerges from a two day workshop, *Sleep and Society: Continuity and Chaos across the Life Course*, conducted on the 15th and 16th of August 2019 at the Institute for Social Science Research, The University of Queensland. This workshop aimed to identify key emerging issues in the interplay of sleep and social functioning and establishing a statement and agenda to inform research, policy and practice that recognises sleep and sleep security as a social index.

Sleep and society workshop

The *Sleep in Society* workshop brought together, for the first time, key established and emerging leaders in sleep and social science to address a new societal challenge. Capacity, including human capacity, has been identified as a limitation to growth in this emerging research field. The workshop included promising early career researchers, together with more experienced mentors, to shape a

sustainable and effective future workforce to meet that limitation. The participation of senior, Emeritus, and Fellows of the Academy of the Social Science in Australia (FASSA) and research leaders from diverse disciplines within the social sciences, demonstrated a strong and genuine commitment to this transdisciplinary, generational agenda.

List of workshop participants (in alphabetical order):

Dr Alicia Allan

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The University of Queensland, Australia

Please refer to the end of this report for full biographies of workshop participants and report authors.



Workshop aims

This workshop aimed to bridge existing disciplinary gaps to produce a new focus for research excellence, and to identify new pathways for translation to policy and practice. The specific objectives of the workshop were to:

- Establish sleep as a meta-index of social functioning and focus of social science study.
- Share new measurement tools and approaches, and develop solutions to social disparities and disadvantage.
- Explore avenues for sharing of evidence for science, practice, and community benefit.
- Develop a research policy agenda for sleep and sleep security as a social science priority.

Workshop structure

The workshop comprised four key themes linked to life course stages, discussed over the two days.

- 1) Sleep in a Complex Social World: Sleep, families, and care environments.
- 2) Sleep in a Broadening Social World: Sleep, education and mental health
- 3) Sleep in a 24-hour Society: Sleep, Work, and Social Disadvantage
- 4) Sleep in an Aging Society: Sleep, aging and the 'new old' .

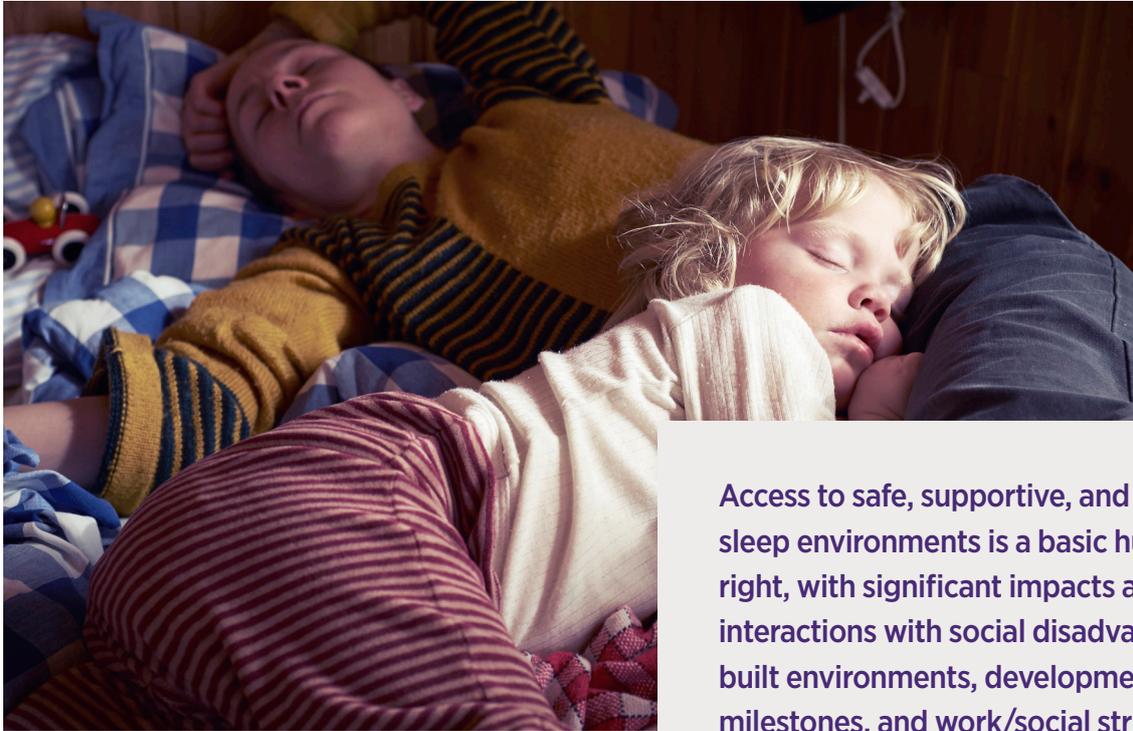
The structure provided an opportunity for sharing and debate of the significant social tensions that may bring about continuity or chaos in sleep patterns across the life course.

Methodology

Through a series of “individual to group consensus” activities across the two days of the workshop, workshop participants identified the key policy and research priorities, and associated domains of activity relevant to each theme. On the final afternoon of the workshop these policy areas and domains were used to generate key research questions for sleep in society. The priority areas, domains, and research questions that emerged from the workshop are outlined within this document.



Sleep and society: key social issues



Access to safe, supportive, and healthy sleep environments is a basic human right, with significant impacts and interactions with social disadvantage, built environments, developmental milestones, and work/social structures.

Sleep in a complex social world: Sleep, families, and care environments

The family plays a major role in shaping children's sleep behaviour, as well as that of their parents and care-givers. Family sleep patterns interact with externalities such as work and education demands and social support. Social stability, cohesion, and security in this family context may be evident in the cohesion, regularity and stability of family sleep.

The child, their family, and the external care and community environment are each key actors in a strong social fabric. The traditional parent-child paradigm of sleep has led to a narrow understanding of children, parent, and family

sleep behaviours. Sleep patterns not only reflect work patterns but the social norms, societal institutions expectations and divisions of power across gender and societies.

Sleep provides an opportunity to determine the impact of care environments on the child in a new way, and identifies new targets for supporting family function, health, and harmony. This approach could have impacts in the broader community, especially for families experiencing disadvantage or disarray.

Sleep in a broadening social world: Sleep, education and mental health

Sleep has immediate and longer-term impact on learning and wellbeing. Healthy sleep patterns support educational engagement and positive life trajectories. Disrupted sleep contributes to the cycle of disadvantage. In disadvantaged communities, environmental conditions and circumstances disrupt children's sleep and limit their capacity to learn and regulate behaviour.

Sleep interacts with key social, developmental, and educational transitions. There are strong relationships between sleep in adolescence,

social drivers for independence, autonomy and responsibility, and increased exposure and vulnerability to risks (including physical harms and mental health risks). This confluence demands a focus on the role of sleep in the social fabric of adolescents and young people. In particular, there is a need to identify and understand how sleep need and sleep security can be addressed and recognised, particularly in relation to specific social challenges, including irregular work and housing arrangements, drug and alcohol use, educational structures and communication increasingly mediated by technology.

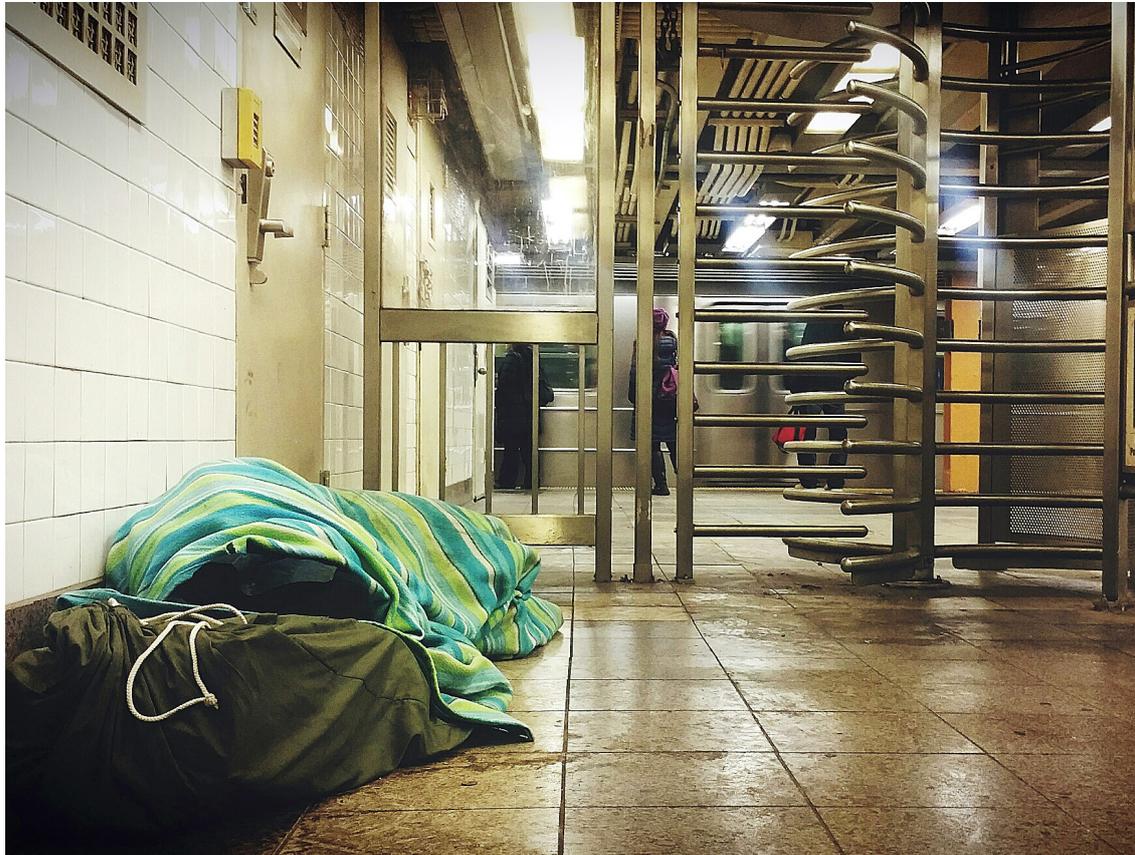


Sleep and society: key social issues

Sleep in a 24-hour society: sleep, work, and social disadvantage

The contemporary work landscape now includes a greater proportion of shift work, early morning, late night, intermittent, unreliable, or rotating work schedules. Many of these work contexts conflict with goals for regular and sufficient sleep. For some workers, this trade-off allows increased lifestyle flexibility and maximizes out-of-work-hours engagement. For others, it decreases choice and control over work, and conflicts with family, social, and community life, and increases the risks associated with sleep insecurity.

For those experiencing greater disadvantage, sleep insecurity may strongly amplify and reinforce health and social risks. For some experiencing homelessness, where 'sleeping rough' is a conspicuous character type, sleep insecurity may be a key component of stigma, inaccessibility and disengagement. Understanding the balances between work and non-work, sleep, and social function is crucial to these questions.





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Sleep in an ageing society: sleep, ageing and the ‘new old’

Older adults are an increasing proportion of the population. This ‘new old’ differ from previous generations in many ways, in line with broader societal changes. Expectations for later-life social participation and function have also changed, with increasing numbers expecting a healthy physical and social life for decades past retirement. Sleep in later life is sometimes described as more ‘brittle’, and more susceptible to external influences and context.

Sleep is strongly implicated in age-associated risks (such as risk for falls and cognitive impairment), but may also play a strong role in precipitating and promoting social risks such as isolation and loneliness. Decisions about home and care arrangements provide a range of environmental and social considerations that are important to ensure quality of life, and appropriate support. The sleep of informal family carers as well as those providing paid formal care also needs careful consideration within support and policy for ageing well.

Reflections from Day 1

Written and presented by Dr Jessica Paterson

Professor Simon Smith opened the day with a consideration of sleep security – the idea that access to safe, restful and adequate sleep could be considered as basic a human right as access to clean drinking water.

We then had the privilege of hearing Professor Paul Memmott's description of his life's work, particularly the sleeping behaviours of indigenous Australians for whom sleeping outside, in environments that included smoke, light and fire was the best way to ensure safe, restful and adequate sleep. The strategy of waking up to sing during the coldest part of the night, and the circadian trough, reminds us that sleep may need to be biphasic in certain circumstances in order to be safe, restful and adequate.

Professor Memmott's talk really highlighted for me how concrete my own ideas about sleep can be. This was reinforced for me by Associate Professor Leah Ruppner's discussion about sleep as a power issue, as a potential site of inequality and power. Who has the right to good sleep? Well – in line with Professor Smith's idea of sleep security – everybody does. Who decides what good sleep is, and what it looks like? Sometimes I think that's my job. But Professor Smith and Professor Memmott and Associate Professor Ruppner got me thinking about how much of my own privilege is embedded in the recommendations I make to those struggling with sleep, to new parents, to tired shift workers. And how helpful is that? Probably not very.

So maybe we need to be more flexible about how we approach sleep, and particularly 'problem' sleep. Maybe this will help to enable sleep security? We have more and more rules about the way sleep should occur, the things that facilitate good sleep, and the terrible negative consequences of poor or disturbed sleep. There are things which disturb sleep that we can fix – eg light levels, noisy environments. Things which we can temporarily endure – eg pregnancy, illness, babies etc. And things we can only manage – eg shift work, chronic pain. But often the thing that keeps people awake is their thoughts, their worries etc.

Our social world shapes our thoughts and beliefs. So maybe we need to reframe the social stories we tell about sleep. Of course, the idea of being flexible about our approach to sleep falls apart a little when you look to apply this idea to children – who tend to thrive on consistency and routine, while simultaneously creating chaos. But children are perhaps already more flexible than we think they are...

A good example of this was one of Dr Sally Staton's slides showing that some kids were having naps at childcare more than 4h out of sync with their naps at home. What's different at childcare? Everyone is having a nap. The social story around sleep is different at childcare.

The social story around sleep is perhaps at its most powerful during adolescence when natural delays in sleep phase conflict with pretty much everything else in the Western world but particularly school times. As Dr Kalina Rossa and Dr Michelle Short described, this life stage coincides with increasing independence, new social challenges and multiple competing priorities.

Key amongst these priorities is peer relationships. Dr Caroline Salom showed us so clearly how the tribe can influence decision making and behaviour for adolescents and young adults. How can we use this influence to help adolescents think about what they want and need in relation to sleep, and empower them to make the choices that get them there.

The is paradox: do we need to be more flexible in our approach to sleep, do we need to loosen things up, in order to get consistency in sleep?

One of the biggest takeaways from today is that we need and want to be making changes in public policy.

If we were more flexible in the way we thought about sleep would this paradoxically alleviate the worry and actually lead to better sleep? Would increasing flexibility in our attitudes towards sleep create a society that allows us to nap in public places and to dedicate public spaces to safe napping zones? By giving up the struggle with sleep will we find we finally sleep soundly?

Reflections from Day 2

Written and presented by Ms Laetitia Coles

Sleep and Society: Continuity and Chaos across the Life Course – a bedtime story!

Once upon a time some of us laboured and toiled for a standard 8-10 hours a day. Then along came labour market changes and internet provisions, and the emersion of the 24 hour society. People began to increase the flexibility of their work so many people could ostensibly work wherever and whenever they chose. Little did we realise, soon enough, *wherever* and *whenever* would turn into *everywhere* and *all the time*, and our sleep suffered.

Professor Sally Ferguson recognised this problem and embarked upon a noble quest to understand more about it. Her work has identified how the demands of paid work bleed into daily life, that because of technology we are always on, our commutes are long, and we have increased precarity of work. This negatively impacts certain people more than others. There is a double-edged sword to flexibility and non-standard work hours, with significant negative impacts on health for many.

The leaders of the land decided this problem needs investigating, and created a Bedtime Reading report to understand more about health and sleep.

Other noble researchers have heeded the call and asked many more questions about the importance of sleep in people's lives. Associate Professor Leigh Signal showed us that within the aviation industry there are different guidelines for rest for pilots and cabin crew. Some say this is because of safety, others (us in this room) think this hides gender and power differences. Professor Signal also demonstrated how there are intersectional institutional disadvantages of sexism and racism in night shift work, so that Māori mums are more likely to work night shift than non-Maori mums. Yes, it is true what Professor Ferguson has said: institutional sleep restrictions disadvantage some people more than others.

Dr Rosie Gibson joined the quest but to understand sleep amongst older people living with dementia and their caregivers. We were all reminded of the importance of hearing the voices of those experiencing dementia and sleep problems. And Dr Gibson's quest discovered how important sleep is across the life course for preventing dementia and preventing sleep problems in older age.

Finally, Dr Alicia Allan showed us that old age is not the only predictor of poor sleep – that sleep is multifactorial, and the answers are equally multifaceted. Transitions and changes can impact older people's sleep but that simple changes – like bringing more light into people's homes and where they spend the majority of their day – might make meaningful differences.

By the time we age, we have a lifetime of sleep history that can impact the way we sleep, live, function, and work as older adults. The sleep patterns we develop, and accumulate, from infancy, throughout childhood and during our working lives, can profoundly influence our health as older adults, and influence the health of those who will care for us one day.

Many of us do not yet know how vital sleep is throughout our lives, that's why these messages need to be distributed far and wide.

Then we will all be able to help write a new "bedtime story".

Sleep and society priority areas and domains

A total of **25 priority** areas were identified across the 2 day workshop. These were subsequently grouped into **6 domains**, for which a handful of **key research questions** were generated for each stage of the life course. The six domains that emerged on the course of the workshop were...



Domain 1: Built environments and infrastructure



Domain 2: Technology



Domain 3: Institutional and organisational systems



Domain 4: Positive change



Domain 5: Social dynamics



Domain 6: New frontiers

Domain 1: Built environment and infrastructure



Priority areas:

- Ensuring healthy sleep environments at home and in care
- Provision of public and private spaces to sleep and sleep opportunities

Research questions:

Children and families

- How do we build schools, childcare centres and homes to support sleep of children, family members, teachers and childcare workers?
- Are there inequalities in sleep environments along race, class and social inequality lines?
- What is the relationship between sleep, environmental and social cues? How do these affect development, learning, health and social functioning?

Adolescents and young adults

- How do safe public sleeping facilities for young people reduce real world risks such as fatigue related car crashes?
- How do we provide safe, secure and developmentally appropriate public and private spaces for sleep in young people?
- What are the perceptions, beliefs about and social drivers of sleep environments in adolescents and young adults?
- How does young people's sleep change across different settings (e.g. family home, share housing, college accommodation)?

Adults

- What does a built environment look like that supports sleep and circadian rhythms?
- How do work spaces and places (e.g. lighting environments in offices) influence sleep patterns?

Older adults

- How can we better describe and understand the current built environment for older adults (in a variety of contexts)?
- How can smart and adaptive homes support sleep in older adults?
- How feasible are in-home adaptations to support sleep and can a sleep audit be integrated into existing home assessments?



Domain 2: Technology



Priority areas:

- Identifying the impacts of technology and digital media exposure and use
- Recognition and management of Work Bleed – the dark side of non-standard and flexible work

Research questions:

Children and families

- How does digital exposure and use impact children's and parent's sleep?
- How does technology reach into family life in ways that disrupt or support sleep?
- What/How does light exposure impact sleep and mood across the life-course?

Adolescents and young adults

- What aspects of technology (e.g. level of interactivity/social linkages, content, platform, physiological arousal, light wavelength, duration, timing) impact sleep and for whom?
- What strategies can young people implement and share (at different stages) to promote better sleep through better mental health (or vice versa)?

Adults

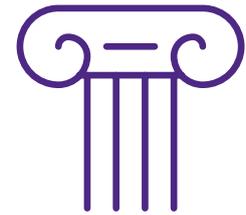
- How can we use technology positively to support sleep in different worker groups?

Older adults

- What are the pros and cons of using sleep-tracking technology in older-adults?
- What technology can be incorporated into non-pharmaceutical interventions to improve sleep?
- Can video conferencing be used to collect audible data or diaries from more hard to reach groups – or those not used to engaging with research?



Domain 3: Institutional and organisational systems



Priority areas:

- Creating and promoting organisational level change to support sleep
- Identifying organisational impacts on families' sleep (work time, care times, school times)
- Designing and implementing systems that are tolerant or responsive to sleep need
- Allocation of socioeconomic resources to support good sleep

Research questions:

Children and Families

- How do workplaces understand the sleep needs of parents?
- Do schools and workplaces have responsible practices in sleep, especially in vulnerable communities?
- Is sleep a potentially valuable new mechanism for explaining the link between social and economic vulnerability, disadvantage and educational attainment, employment, work and performance?

Adolescents and young adults

- How do macro policies, such as housing affordability, economic policy, social support, access to health/mental health services) impact young people's sleep?
- What educational and social policies can be implemented to support young people's sleep (e.g. changes to school start-times, before school activities, housework loads, and workplaces)?
- How can we better inform and implement policies to raise awareness of sleep need and restrict negative impacts on sleep?

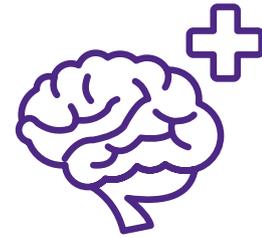
Adults

- What are the barriers and enablers to creating organisational change to support sleep?
- Why does work bleed into non-work time?
- Who is driving work flexibility and what are the consequences of this?

Older adults

- What is the knowledge of key stakeholders (e.g. government, care providers, advocacy groups) regarding sleep?
- What is the knowledge of sleep health among care assistants in aged care – what is a sleep problem – how do they help residents manage sleep?
- Can sleep be integrated into aged care assessments to predict decline?

Domain 4: Positive change



Priority areas:

- Scaffolding fragile sleep and building in strategies to support sleep across the life course
- Fostering collaborative design of realistic strategies and tools for sleep health
- Socially and culturally attuned strategies for sleeping well
- Better models of respite care and ways to protect the sleep of carers

Research questions:

Children and families

- How can we best utilise emerging new points for social interventions (e.g. childcare) to support healthy sleep development?
- How can we better account for individual and developmental differences and social contexts in sleep interventions?
- Can and how do we build a 'social license' around sleep in families, schools, workplaces and communities?

Adolescents and young adults

- What are the parameters of effective napping (e.g. timing, duration, setting) to reduce sleep-related risk for young people?
- How could new transport strategies improve young people's 'commute' to improve their sleep?
- What strategies do young people think are appropriate/achievable to support better sleep?

Adults

- How do we develop and support effective sleep champions?
- What are realistic strategies and tools for sleep health in different contexts: application of collaborative design?

Older adults

- Can sleep health guidance be incorporated into primary care plans?
- What are the views of families, residents and staff on factors affecting sleep?
- Can older adults act as sleep champions for managing sleep? – peer led/tailored sleep services?
- How can we de-stigmatise socialised changes to sleep with aging?

Domain 5: Social dynamics



Priority areas:

- Understanding sleep as an index of power and disadvantage
- Addressing inequities of sleep in children and families
- Recognising norms of gender, culture, and life transitions
- Exploring the impacts of instability in work, relationships, and housing
- Developing new knowledge of the intergenerational effects of non-standard work hours
- Sleep as a mechanism in social isolation and loneliness

Research questions:

Children and families

- How do sleep patterns interact within families?
- How does sleep regularity, disruption, and health impact on child development, parents' work and home lives?
- What is the relationship between core responsibilities, power dynamics and parental sleep?

Adolescents and young adults

- What are the changes in social networks that occur across adolescent transitions, and how do they affect sleep?
- How do relationships (e.g. with peers, parents) impact sleep and wellbeing?
- What do young people think healthy sleep looks like?

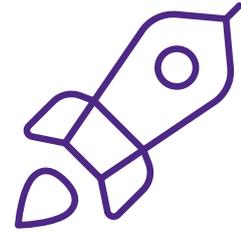
Adults

- Who carries the burden of non-standard work hours and working arrangements?
- Why do some occupational groups have 'better' working time arrangements?
- What are the intergenerational effects of non-standard work non-standard work arrangements?
- What role does housing instability play in 'choices' or options for working time arrangements?

Older adults

- How does sleep and circadian health impact social isolation and loneliness?
- How can aged care facilities be adapted to suit personal timing, preferences and change types?
- How do the dimensions of eating, drinking and financial security impact on sleep – is it bidirectional?
- How are sleep problems in older adults perceived and managed within diverse families (e.g. different cultural, generational, socioeconomic groups)?

Domain 6: New frontiers



Priority areas:

- Innovation in the best ways for collecting and measuring sleep data
- Deeper understanding of the influence of daytime (diurnal) physical/social activities on sleep
- Exploration of the intersection between biological and social processes
- Promotion of a life-course approach to sleep research
- Continuity – linking early to later life, identifying protective factors and cross developmental points

Research questions:

Children and families

- How do we develop consistent, reliable and valid measures of children's sleep across context or over time?
- Can we develop new measures of sleep and social function using co-design with families and parents?
- How do we understand individual variability in susceptibility to sleep cues?

Adolescents and young adults

- How do we evaluate policies for sleep improvement to account for differences in gender, geography, socioeconomic status, and culture?
- How does drug use impact healthy sleep in young people and what is the relationship with social functioning, treatments and recovery?
- How can disorder-specific models of mental health inform sleep research?

Adults

- Predictors of 'success' in working with non-standard hours: how do our early years set us up?

Older adults

- Is night care (as opposed to day care) an appropriate and feasible option to support carers sleep?
- How do we support sleep across life changes and significant transitions?
- Can mass multi-model agendas be incorporated into resident villages and age care?

Author biographies

Report lead authors

Dr Sally Staton

Sally is an educational and developmental psychologist currently undertaking an NHMRC Research Fellowship to examine the impact of sleep practices in childcare settings on children's behavioural regulation, wellbeing and learning. Her expertise is in observational and physiological measurement in early childhood settings, longitudinal, experimental and randomised control designs. She has translated her work on sleep practices in ECEC into short videos for parents and educators, has produced professional development programs for ECEC educators and ECEC quality authority regulatory officers in Australia. In 2016 she was named among Queensland's Young Tall Poppy Scientists.



Professor Simon Smith

Simon works to understand the role of sleep and circadian rhythms in a healthy, safe, and productive life. He has significant experience and interest in the wellbeing of children and young people, older adults, people living with dementia, brain injury and neurological disease, shift-workers and athletes. He uses measures including actigraphy, polysomnography, behavioural assessment, psychometric assessments, hormone measures, naturalistic and simulated driving, and environmental monitoring. Simon is a registered psychologist with endorsed practice in Clinical Neuropsychology, a Fellow of the College of Clinical Neuropsychologists, and a member of the American Academy of Sleep Medicine. He has worked extensively in both research and clinical settings as a psychologist and sleep scientist.



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(in alphabetical order)

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Alicia is interested in how sleep occurs in context, and how aspects of the physical environment can affect sleep and wellbeing. Her research has involved a range of populations, including older adults, people with concussion, children, and office workers. Alicia has particular expertise in the measurement and characterisation of light environments. Her PhD examined sleep in older adults and people living with dementia in the community, focusing on the contextual influences of partners and light exposure. Subsequently, she has worked on projects assessing the role of light in office building occupant comfort and wellbeing, and light in older adults' homes.



Professor Janeen Baxter

Janeen is Professor of Sociology and Director of the Australian Research Council Centre of Excellence for Children and Families over the Life Course in the Institute for Social Science Research at The University of Queensland. Janeen has research interests in inequality, family, gender and the life course and has published widely in these areas. Janeen is an elected fellow of the Academy of Social Sciences in Australia and serves on a number of government advisory committees and international project reference groups.



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Annemaree is an elected fellow of the Academy of Social Sciences in Australia



Professor Sally Ferguson

Sally is a Research Professor with the Appleton Institute, CQ University in Adelaide with a background in circadian biology. Our body clocks help keep us synchronized to the world around us but working against our clocks has implications for sleep and waking health and well-being. Sally and her team are interested in the relationship between sleep, wake and work patterns, particularly for those working shift work. Sally does a lot of work in the area of fatigue risk management and sleeps very well herself.



Laetitia Coles

Laetitia is a post-doctoral research fellow at the Institute for Social Science research. She is a sociologist with a working interest in examining how the gendered nature of the paid labour market impacts workers and families. In her PhD she examined the way workplace policy influences father engagement with children. As part of her post-doctoral research fellowship, she examines the way children's sleep impacts parents' health and wellbeing, as well as their engagement in the paid labour market. She plans to also examine working conditions of women in ECEC.



Dr Rosie Gibson

Rosie has a background in psychology and clinical sleep service. She has established a New Zealand-based research programme regarding sleep in healthy aging, dementia and caregiving. This includes exploring risk factors and outcomes of problem sleep with ageing, qualitative exploration into the sleep experience, and an intervention to improve sleep of people with dementia and their family carers. Her work has a person-centred and dyadic approach, aiming to better understand the dynamics of sleep with ageing and disease, and the mediating properties of sleep behaviours on health and well-being, as well as living standards, and caregiving situations.



**Associate Professor
Abdullah Mamun**

Mamun is an internationally recognised leader in the areas of developmental stages of life and intergenerational perspectives. Mamun has made significant contributions to understand the critical stages of life and early life determinants of health. From the life course perspective, some of his works are influential while thinking about the early development of health and well-being. For instance, his research shows that there is a high degree of continuity of sleep problems from childhood to adulthood and early childhood sleep problems predict adult obesity and cardio-metabolic risk. He is interested to contribute new knowledge about the extent that socioeconomic, family and environmental factors track from generation to generation and how this impacts on health and well-being of the future generations.



Dr Jessica Paterson

Jessica is a researcher at the Appleton Institute at CQUniversity's Adelaide campus, and a registered psychologist. Jessica is interested in sleep and mental health across the lifespan, but particularly in the experience of young adults as they enter the workforce and balance the multiple demands of modern life. Jessica and her team work to understand how sleep, wake and work interact to influence physical and psychological health, particularly in shift workers.



**Professor
Paul Memmott**

Paul is a trans-disciplinary researcher (architect/ anthropologist) and the Director of the Aboriginal Environments Research Centre (AERC) and the Indigenous Design Place (IDP) at the University of Queensland. Memmott's field of research encompasses the cross-cultural study of the people-environment relations of Indigenous peoples with their natural and built environments, including Aboriginal housing and settlement design, Aboriginal access to institutional architecture, Indigenous constructs of place and cultural landscapes, vernacular architecture and Native Title, social planning in Indigenous communities, homelessness and family violence. Paul is an elected fellow of the Academy of Social Sciences in Australia



Peter Rankin

Peter uses a broad research background and high level statistical skills to answer applied and basic social science research questions. His recent sleep related research includes estimating and evaluating sleep and daytime napping in children using three-axis accelerometry.



Peter also provides statistical input into numerous social science, education, social disadvantage, and child development research projects. His unique combination of expertise spanning statistics, science, biology, psychology, and sociology allows him to provide valuable input into analytical decisions in a range of disciplines.

Report co-authors cont'd

Dr Kalina Rossa

Kalina is interested in the relationship between sleep, stress, self-regulatory functions and risk taking in young people. Her PhD research investigated sleep as a modifiable determinant of risk engagement and incorporated physiological and ambulatory measurement of daily sleep, self-regulation and risky behaviours including dangerous driving and substance use. She has since worked within the government and health sciences sector investigating sleep and behavioural regulation in children with rare neurodevelopmental disorders. Her current work centres around investigating sleep health, and self-regulation in both clinical and non-clinical populations, including the development and design of a behavioural sleep intervention aimed at reducing crash risk in young drivers.



Dr Caroline Salom

Caroline leads the ISSR research group focussing on substance use, mental health and the risky behaviours associated with these conditions. Her research centres on the developmental epidemiology of these health issues and the design of health and social services to meet these needs. She has worked in academia, program delivery and in industry and is passionate about translating knowledge from research into effective practice and systems that support this.



Dr Leah Ruppner

Leah is an Associate Professor of Sociology and Co-Director of The Policy Lab at the University of Melbourne. She is an expert in family, gender, public policy, cross-national research and quantitative methods. Associate Professor Ruppner's current research focuses on barriers to maternal employment, female representation in government and gender inequality in the home. Her research is published in *Journal of Marriage and Family*, *Sociological Methods and Research* and *European Sociological Review*. She also has expansive media coverage in the *New York Times*, *Washington Post* and the *Guardian* and external grant success including the ARC DECRA and a current ARC Discovery on sleep



Dr Shamsi Shekari

Shamsi completed her PhD with Queensland University of Technology in 2016, and her postdoctoral fellowship with Alertness CRC at Monash University and Austin Health in January 2019. Shamsi is currently a Research Fellow with the Institute for Social Science Research (ISSR) at UQ. Her research interests are key socio-psychological issues such as drowsy / fatigued driving and risky driving behaviours. Shamsi is the investigator of NHMRC project "Reducing crash risk for young drivers: A randomized control trial to improve sleep". Shamsi is also the leader of the research project in ISSR "Characteristics of driver impairments under chronic influence of illicit drugs and prescription medications. A simulated driving experiment".



Dr Michelle Short

Michelle is a Research Fellow in the School of Psychology at Flinders University. Her research focuses on sleep in adolescents, specifically biopsychosocial development and how it impact upon sleep, and the consequences of poor sleep, particularly on mood and emotion regulation. Dr Short also works as a psychologist at the Flinders University Child and Adolescent Sleep Clinic and in private practice.



Professor Karen Thorpe

Karen is Deputy Director-Research at the ISSR where she also leads the Childhood Development, Education and Care Research group. In 2013 and 2019 she was named by the Australian Financial Review as among Australia's 100 Women of Influence for the impacts of her research on educational and family policy. Her research examines the effects of children's early life experiences on social, learning and health trajectories across the lifespan with particular focus on early childhood education and care (ECEC) environments. Across the past 6 years her work has included studies of the impact of sleep-rest policy in childcare settings on children's development. She currently leads an ARC funded study of sleep transition in the first 5 years of life



Associate Professor Leigh Signal

Dr. Leigh Signal is an Associate Professor and is portfolio director of the Fatigue Management and Sleep Health group at the Sleep/Wake Research Centre, Massey University, Wellington.

Leigh is involved in both basic and applied sleep and circadian research. She works with a broad range of industries to assist them in identifying, managing and mitigating fatigue related risks. She is interested in understanding the sleep of women across the perinatal period, the relationship between sleep and mental health, and ways we can support women to maintain good sleep health and mental health across this timeframe. She also has an interest in understanding inequities in sleep for women and children and the sociodemographic factors that drive these differences.



Professor Mark Western

Mark is the Director of the Institute for Social Science Research at The University of Queensland and a Chief Investigator in the ARC Centre of Excellence for Children and Families Over the Life Course. Mark has previously worked at the University of Tasmania and the Australian National University and held visiting appointments at the University of Manchester, the University of Wisconsin-Madison and the Institute of Education. Mark is a sociologist with research interests in social inequality, social science methods, and promoting multidisciplinary and multi-sectoral collaborations on real world problems. He is a Fellow of the Academy of Social Sciences in Australia.



Have a question about Sleep in Society?

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